

Subject Index of Papers Published in the AIAA Student Journal

Volume 1, 1963–Volume 6, 1968

CONTRIBUTED PAPERS

AIRCRAFT AERODYNAMICS

- Analysis of the effect of vortex interference on a wing surface at Mach no. 2.2. J. T. Callaghan and D. A. Sowers (Vol. 1, April 1963)..... 15
- Preliminary study of the rate of growth and decay of blowing-jet-induced circulation about two-dimensional profiles. F. C. Karins (Vol. 1, April 1963)..... 18
- Preliminary investigation of the aerodynamic characteristics of various parawing configurations. D. C. Coe, D. E. Knutsen, and R. E. Wulf (Vol. 2, May 1964)..... 6
- Analog computer solutions for generalized Joukowski profiles. R. M. Jenkins (Vol. 2, October 1964)..... 16
- Construction of airfoil shapes by conformal mapping with the use of the analog computer. D. R. Lewellyn (Vol. 4, April 1966)..... 44
- Analysis of the para-foil. G. A. Nathe (Vol. 5, February 1967)..... 1
- Study of aerodynamic deployable decelerators at hypersonic velocities. C. H. Law (Vol. 5, February 1967)..... 10
- Investigation of the performance of highly flexible blades in rotary-wing application. C. F. Greer (Vol. 5, December 1967)..... 191
- Decay of trailing vortices. H. E. Sherrieb (Vol. 6, February 1968)..... 11

ASTRODYNAMICS

- Determination and potentialities of advanced free-fall interplanetary trajectories. M. A. Minovich Jr. (Vol. 2, May 1964)..... 23
- Stability of spacecraft motion in the four-body problem near the earth-moon equilateral libration points. B. E. Schutz (Vol. 4, February 1966)..... 2
- Solar pressure damping of the librations of a gravity-gradient oriented satellite. E. G. Mallach (Vol. 4, December 1966)..... 113
- Abort problem. R. L. Carpenter Jr. (Vol. 5, October 1967)..... 141
- Use of braking ellipses for spacecraft re-entry. T. A. Heppenheimer (Vol. 6, February 1968)..... 17

FLIGHT MECHANICS

- Analog optimization study of a low-altitude supersonic bomb trajectory. J. D. Shaughnessy (Vol. 2, October 1964)..... 9
- Analog computer simulation of aircraft carrier landings. R. V. Hood (Vol. 3, February 1965)..... 27
- Delta wing stability in the pitch plane. C. F. Holt and G. J. Kron (Vol. 3, February 1965)..... 7
- Investigation of airplane roll coupling in an abrupt aileron roll as a function of aileron differential. E. L. Rutan (Vol. 4, April 1966)..... 38
- Technique for analyzing the dynamic behavior of missiles. C. W. Ingram (Vol. 5, February 1967)..... 25
- Low-speed aerodynamic stability of winged and wingless re-entry configurations. J. K. Willoughby (Vol. 5, April 1967)..... 53
- Free-flight wind-tunnel technique to determine the aerodynamic forces on a hypersonic lifting configuration. C. A. Campbell (Vol. 5, October 1967)..... 124
- Pure pitching motion of a basic finned missile. R. C. Nelson (Vol. 5, October 1967)..... 135
- Theoretical dynamic stability of a tethered parafoil. J. M. Summa (Vol. 6, October 1968)..... 137
- Time-optimal flight paths. R. L. Berry (Vol. 6, October 1968)..... 132

FLUID MECHANICS

- Flow in the orifice of a resonant cavity. B. Quinn (Vol. 1, April 1963)..... 1
- Solution for flow in the inlet region of a two-dimensional channel by a modified form of Oseen's approximation. T. M.-S. Hsia (Vol. 1, April 1963)..... 10
- Effects of transpiration through angled slots on the development of the turbulent boundary layer. G. L. Harris (Vol. 1, December 1963)..... 17
- Experimental and theoretical aspects of a fluid amplifier. P. H. Janak (Vol. 1, December 1963)..... 1
- Exploratory study of the wake of a two-dimensional cylinder at $M_\infty = 9$. E. M. Murman and R. L. Hurlburt (Vol. 2, May 1964)..... 17
- Influence of ambient gas pressure on the rate of gravity flow of powders. C. H. Gibbs (Vol. 2, May 1964)..... 30

- Determination of the constants of a viscoelastic fluid. R. C. Lessmann (Vol. 2, October 1964)..... 1
- Study of the validity of the hydraulic radius concept for viscous flow in noncircular ducts. G. Ziments (Vol. 2, October 1964)..... 19
- Decay of a strong plane shock in an ideal gas. R. R. Karpp (Vol. 3, December 1964)..... 26
- Experimental determination of mean particle sizes in an aerosol. G. S. Jizmagian (Vol. 2, December 1964)..... 1
- Experimental study of the shock structure of a highly underexpanded jet exhausting from a sonic nozzle. S. A. Crist (Vol. 3, April 1965)..... 43
- Experiments with transversely impinging jet flows. R. S. Cummins (Vol. 3, April 1965)..... 72
- Study of jet ejector phenomena. C.-A. Wan (Vol. 3, October 1965)..... 77
- Condensation in the underexpanded jet. D. D. McBride and S. A. Crist (Vol. 3, December 1965)..... 110
- Internal waves in a stratified liquid. J. McMichael (Vol. 3, December 1965)..... 106
- Investigation of hypersonic flow around a slender cone. E. M. Schmidt (Vol. 3, December 1965)..... 129
- Heat transfer and pressure gradients over a yawed cylinder. E. Reiss (Vol. 4, February 1966)..... 14
- Pressure effect on a cone caused by a spike protruding at angles of attack. R. E. Sancewich and L. Hodowski (Vol. 4, April 1966)..... 49
- Radiating shock layer of a cylindrical blast wave. L. A. Carlson (Vol. 4, April 1966)..... 32
- Survey of skin friction methods in the turbulent compressible boundary layer on a flat plate at hypersonic Mach numbers. M. A. Jackson (Vol. 4, April 1966)..... 55
- Deformation of subsonic wind-tunnel wakes. C. Verna (Vol. 4, October 1966)..... 86
- Spanwise leading-edge blowing on a 75° half-cone body. F. C. Thames (Vol. 4, October 1966)..... 68
- Analysis of natural boundary-layer transition. C. F. Knapp (Vol. 4, December 1966)..... 147
- Effect of a heated driver gas on shock-tube performance. H. Legner (Vol. 4, December 1966)..... 153
- Internal performance of a two-dimensional expansion-deflection nozzle. L. E. Dunbar (Vol. 4, December 1966)..... 137
- Two approximate solutions of the hypersonic blunt-body problem. A. C. Gudikunst and E. K. Huckins III (Vol. 5, February 1967)..... 17
- Hypersonic viscous-interaction and rarefaction effects on impact probes. R. B. White (Vol. 5, April 1967)..... 46
- Interaction of multiple rows of vortices. P. M. Erb and B. A. Wilson (Vol. 5, April 1967)..... 50
- Shock wave location for circular-arc airfoils. R. J. Hawks (Vol. 5, April 1967)..... 58
- Hypersonic flow along the stagnation streamline. D. L. Brott (Vol. 5, December 1967)..... 202
- Solution of the supersonic asymmetric blunt-body problem by integral relations. F. R. Bailey (Vol. 5, December 1967)..... 198
- Experimental study of supersonic jet penetration in a supersonic flow. R. E. Mahaffey Jr. and R. A. Weinraub (Vol. 6, February 1968)..... 7
- Determination of the inviscid flowfield with massive blowing about a two-dimensional cylinder. P. Kutler (Vol. 6, April 1968)..... 77
- Experimental investigation of the velocity distribution in a confined vortex. W. H. Newton and B. F. Ogletree (Vol. 6, October 1968)..... 129
- Controlled nozzle separation for thrust vectoring. L. H. Chasteen (Vol. 6, October 1968)..... 125
- Experimental studies of the orifice effect for rectangular configurations. J. S. Bias (Vol. 6, December 1968)..... 190

GROUND EFFECT MECHANICS

- Effect of jet configurations on the critical velocity of ground effect machines. D. B. Fradkin and A. B. Hill (Vol. 1, December 1963)..... 8

GUIDANCE AND CONTROL

- Optimal compensation networks for linear time-invariant servomechanisms. K. H. Kanus Jr. (Vol. 2, October 1964)..... 26
- Passive attitude-control system for earth satellites. R. Haas (Vol. 3, February 1965)..... 13
- Error-correcting procedure for star-pattern recognition. R. Dierstein (Vol. 3, December 1965)..... 115
- Low-level MHD attitude control. A. R. Mitchell (Vol. 4, February 1966)..... 8

- Human operator effects on satellite control system stability. C. K. Wood (Vol. 4, October 1966)..... 76
- Study for a high-frequency electromagnetic angular displacement signal generator. L. J. Quagliata (Vol. 4, October 1966)..... 62
- Asymptotic method for guidance of a high-thrust interceptor. T. L. Willke (Vol. 5, October 1967)..... 119

INSTRUMENTATION AND TESTING FACILITIES

- Design and construction of an open-jet, benchtop, supersonic, blow-down wind tunnel. R. A. Bell (Vol. 3, February 1965)..... 1
- Use of nitrous oxide to generate high Mach number flows. J. R. Nicholson (Vol. 3, February 1965)..... 20
- Investigation of the effects of surface proximity and the resulting wire-to-surface heat transfer on hot-wire anemometer data. D. L. Rhen (Vol. 4, February 1966)..... 24
- High-speed schlieren photography using a Kerr cell modulated laser light source. G. B. Steel (Vol. 4, October 1966)..... 82
- Calibration procedure for measurement of Raman scattering from planetary gas. R. Schlagheck and W. Pierce (Vol. 5, October 1967)..... 130
- Design and operation of an apparatus to study the char densification phenomena. J. R. Brew (Vol. 5, December 1967)..... 185
- Rotating hot-wire anemometer: an experimental analysis. M. G. McLeod (Vol. 6, February 1968)..... 21

LIQUID ROCKETS

- Analysis of experimental measurements of fluctuating rocket exhausts. D. Smith (Vol. 2, December 1964)..... 19
- Rocket combustion instability. D. E. Sokolowski (Vol. 5, October 1967)..... 114
- Comparison of methods for predicting performance of low-thrust rocket nozzles. J. C. Tannehill (Vol. 5, December 1967)..... 178

PLASMADYNAMICS

- Ball lightning as a plasma phenomenon. D. G. Carpenter (Vol. 1, April 1963)..... 25
- Collisionless relativistic magnetohydrodynamics. K. P. Johnson (Vol. 1, April 1963)..... 22
- Some observed effects of electron emission from electrodes in a seeded plasma. A. C. Pinchak (Vol. 1, April 1963)..... 28
- Preliminary design considerations for low density plasma tunnel. D. Finkleman (Vol. 1, December 1963)..... 35
- Microfield approximations in plasmas. R. M. Root (Vol. 3, April 1965)..... 49
- Comparison of velocity profiles in MHD entrance channel flows. R. Zalosh (Vol. 4, February 1966)..... 20
- Magneto-aerodynamic flow past a blunt-nosed model with a skewed magnetic field. D. H. Ross (Vol. 4, December 1966)..... 133

PROPULSION

- Study of secondary injection thrust vectoring. R. B. Pope (Vol. 1, April 1963)..... 6

RE-ENTRY PHYSICS

- Investigation of the change of shape of an ablating hemisphere. J. A. Shupek (Vol. 3, April 1965)..... 56

SOLID ROCKETS

- Experimental development of an isocyanate solid propellant. F. J. Kosdon and R. H. Winston (Vol. 1, April 1963)..... 32
- Combustion of metallized rocket fuels. A. M. Mellor (Vol. 1, December 1963)..... 13
- Experimental study of utilization of throat area variation to produce a throttleable E-D rocket nozzle. J. C. Tannehill (Vol. 3, October 1965)..... 96
- Burning of composite ammonium perchlorate based propellants near their extinction pressure. L. R. Feinauer Jr. (Vol. 3, December 1965)..... 125

SPACE AND ATMOSPHERIC PHYSICS

- Impedance frequency characteristics of the ionosphere at high frequencies. A. D. Poularikas and M. McCutcheon (Vol. 2, May 1964)..... 1
- Head-on collision of interstellar clouds. R. P. Wilson Jr. (Vol. 3, April 1965)..... 37

SPACE PROPULSION SYSTEMS

- Performance characteristics of an argon plasma jet. G. R. Carruthers (Vol. 1, December 1963)..... 27

- Design concepts for a laser-photon propulsion system. L. M. Englund (Vol. 2, May 1964)..... 3
- Preliminary design for a sputtering engine. G. C. Kait (Vol. 6, April 1968)..... 74

STRUCTURAL DYNAMICS

- Large deflection analysis of initially deformed circular cylindrical shells under hydrostatic pressure. A. P. Misovec (Vol. 1, April 1963)..... 39
- Analysis of plastic torsion in circular sections with eccentric holes. G. J. Carey Jr. (Vol. 1, December 1963)..... 30
- Use of schlieren to indicate the sum of the principal stresses. M. G. Briscoe (Vol. 2, May 1964)..... 13
- Arresting gear cable dynamics. R. F. Perry (Vol. 2, December 1964)..... 7
- Stresses and strains in a linear viscoelastic solid propellant charge. C.-M. Waryjas (Vol. 2, December 1964)..... 14
- Analytical investigation of the frangible tubing energy absorption process to determine the initial peak fragmentation force. A. J. Chaput (Vol. 3, April 1965)..... 52
- Determination of the natural frequencies of rings by a Holzer-Myklestad technique. F. C. Weiler (Vol. 3, April 1965)..... 62
- Parametric resonance of elastic columns. T. Farrell (Vol. 3, October 1965)..... 100
- Circular ring plate under transverse load. J. F. Bolton, D. W. Johansen, L. I. Weingarten, and S. W. Zelazny (Vol. 3, December 1965)..... 121
- Analytical and experimental investigation of helicopter pylon stability. R. L. Smith (Vol. 4, December 1966)..... 126
- Measurement of buckling load of an elastically restrained inhomogeneous column. R. B. Scott (Vol. 5, February 1967)..... 22
- Buckling of ogive shell under external pressure. H. M. Haydl (Vol. 6, April 1968)..... 71

STRUCTURAL MECHANICS

- Investigation of the static and dynamic response of a solid-rocket burst diaphragm. D. D. Amos (Vol. 6, December 1968)..... 193
- Stiffened panel flutter in supersonic flow. R. Vaicaitis (Vol. 6, December 1968)..... 196

SYSTEMS DESIGN

- An uncompromised air freighter project for 1975. A. F. Douglas, D. L. Linder, A. S. Okazaki, J. A. Sorensen, P. M. Spaght, J. L. Steel (Vol. 6, December 1968)..... 181

VIBRATIONS

- Vibration analysis of multicomponent systems. W. Stadler and E. H. Hooper (Vol. 3, October 1965)..... 87

EDITORIALS

- How involved should a student be? David C. Hazen (Vol. 3, December 1965)..... 105
- Student research, an aid to creative development. David C. Hazen (Vol. 4, February 1966)..... 1
- Communications barrier. David C. Hazen (Vol. 4, April 1966)..... 31
- What about graduate school? George B. Matthews (Vol. 4, October 1966)..... 61
- Basic science and aerospace development. George B. Matthews (Vol. 4, December 1966)..... 125
- Human side of engineering. George B. Matthews (Vol. 5, February 1967)..... 3
- Student theses: pain or pleasure? George B. Matthews (Vol. 5, April 1967)..... 45
- Student Journal* looks ahead. George B. Matthews (Vol. 5, October 1967)..... 113
- Opportunities unlimited. George B. Matthews (Vol. 5, December 1967)..... 177
- Approaching professionalism. George B. Matthews (Vol. 6, February 1968)..... 1
- The security of scholarship. George B. Matthews (Vol. 6, April 1968)..... 65
- The challenge of change. George B. Matthews (Vol. 6, October 1968)..... 113
- The future—aerospace careers and education. George B. Matthews (Vol. 6, December 1968)..... 137

FEATURES

- The promise of space. Arthur C. Clarke (Vol. 6, February 1968)..... 4
- Some techniques for stimulating creative engineering and new product development. William Bollay (Vol. 6, April 1968)..... 67
- Educational systems design. Charles E. Wales (Vol. 6, October 1968)..... 118
- Recent studies of engineering and science as a profession. Pasquale M. Sforza (Vol. 6, December 1968)..... 138

